

GRAIN ORIENTATION STUDIES IN SUPERCONDUCTORS

Sudhakar Gopalakrishnan and Walter A. Schulze

Institute for Ceramic Superconductivity
New York State College of Ceramics
Alfred University, Alfred, NY 14802.

Abstract

Grain oriented fabrication of ceramics utilizes the presence of some form of anisotropy in the particles of the starting material to obtain textured microstructures. Molten salt or the flux method has been a popular technique for growing crystals and particles with anisotropic morphology and is utilized in this study. The formation of $Ba_2YCu_3O_{7-x}$ in the presence of molten salts of Na, K, Li belonging to chloride and Sulfate systems does not appear feasible in the temperature range upto 900°C . We will also present the results of our studies in using BaY_2CuO_5 as seed crystals in the formation of $Ba_2YCu_3O_{7-x}$ wherein BaY_2CuO_5 has been observed to have better stability in water and against most of the salts as compared to $Ba_2YCu_3O_{7-x}$. Additional results of Molten salt processing of Bismuth systems will also be presented.